

AMENDMENT TO THE CLAIMS

1. (Currently Amended) An apparatus comprising:

a first separation means to separate a sample introduced into the first separation means into fractions, at least some of the fractions, including at least two components;

a second separation means to receive [[each of the fractions]] all of the fractions, each of the fractions being received separately and to separate each received fraction into components, the second separation means being different from the first separation means;

an interface means to link the first separation means and the second separation means; [[and]]

a detector to detect the components;

a first high voltage power source connected across the first separation means; and

a second high voltage power source connected across the second separation means.

2. (Cancelled)

3. (Currently Amended) The apparatus of claim [[2]] 1, wherein said first separation means is a capillary electrophoresis system and said second separation means is a sieving electrophoresis system.

4. (Currently Amended) An apparatus for providing detection of components of samples, the apparatus comprising:

a first and second separation means, each selected from the group consisting of: isoelectric focusing electrophoresis systems, a capillary sieving electrophoresis system, a free solution electrophoresis system, and a micellar electrokinetic chromatography system, ~~a reversed phase liquid chromatography system, a normal phase chromatography system, an ion exchange chromatography system, and a size exclusion chromatography system~~ the first and second separation means being different;

an interface chamber in which all of the fractions separated from a sample by said first separation means, at least some of which include at least two components, are to be

mixed one at a time with a derivatizing agent prior to subjection of each of the fractions one at a time to said second separation means;

a first power supply [[or a first pump]] coupled to the first separation means;

[[a second pump or]] a second power supply coupled to the second separation means; and

a detector.

5. (Previously Presented) The apparatus of claim 4, wherein said detector is a laser induced fluorescent detector.

6. (Original) The apparatus of claim 5, wherein said first separation means is an isoelectric focusing electrophoresis system, and said second separation means is a sieving electrophoresis system.

7. (Currently Amended) An apparatus comprising:

a plurality of first separation means;

a plurality of second separation means; and

a manifold ~~providing a plurality of interface regions~~ formed as a single, unitary body, that provides a plurality of interface regions, and connected to the first and second separation means, each interface region providing an interface between a respective one of the first separation means and a respective one of the second separation means,

wherein each first separation means is to separate a sample introduced therein into fractions, at least some of which include at least two components, and a respective second separation means is to separately receive each of the fractions and to separate each received fraction into components, all of the fractions being received by the second separation means, whereby different first and second separation means can be selected.

8. (Currently amended) The apparatus of claim 7 wherein the manifold comprises:

an inlet, for connection to buffer reservoirs and valve means permitting selective connection to a desired buffer reservoir; and

a channel network within the single, unitary body connecting the inlet to the plurality of interface regions, wherein the single, unitary body includes, for each interface region, [[comprises]] a port for connection to a respective one of the first separation

means, a port for connection to a respective one of the second separation means and a third, waste port.

9. (Previously Presented) The apparatus of claims 7 or 8, which includes a two-dimensional sheath flow cuvette, wherein the second separation means includes a plurality of capillaries, mounted in a two-dimensional array in the two-dimensional sheath flow cuvette; a light source; and optical system for illuminating ends of the capillary tubes with radiation from the light source; and an optical collection system aligned with the ends of the capillary tubes, for collecting radiation and, the optical collection system optionally including a camera lens, a bandpass filter, a prism and a camera and being aligned axially with the ends of the capillary tubes.

10. (Currently Amended) A method of separating components in a sample, the method comprising:

introducing the sample through a first separation means and providing an electric field across the first separation means, to achieve a first separation into fractions;

separately passing each of the sample fractions out of the first separation means into an interface means; and

separately passing each fraction through a second separation means and providing a second electric field across the second separation means, the second separation means being different from the first separation means, for separating components of the fractions, wherein all of the fractions are passed to the second separation means and at least some of the fractions include at least two components.

11. (Currently Amended) The method of claim 10, further comprising providing ~~[[an]]~~ the electric ~~[[field]]~~ fields across each of the said first separation means and said second separation means with a high voltage power source.

12. (Previously Presented) The method of claim 11, wherein said first separation means is a capillary electrophoresis system and said second separation means is a sieving electrophoresis system.

13. (Currently Amended) A method comprising:

introducing a sample into a first separation means selected from the group consisting of: isoelectric focusing electrophoresis systems, a capillary sieving electrophoresis system, a free solution electrophoresis system, and a micellar electrokinetic chromatography system, ~~a reversed phase liquid chromatography system, a normal phase chromatography system, an ion exchange chromatography system, and a size exclusion chromatography system;~~

separating the sample into fractions;

passing each fraction separately through a second separation means selected from the group consisting of: isoelectric focusing electrophoresis systems, a capillary sieving electrophoresis system, a free solution electrophoresis system, and a micellar electrokinetic chromatography system, ~~a reversed phase liquid chromatography system, a normal phase chromatography system, an ion exchange chromatography system, and a size exclusion chromatography system;~~

separating the fraction into components; and

detecting the components of the fraction leaving the second separation means, wherein all of the fractions are passed to the second separation means and at least some of the fractions include at least two components and wherein the first and second separation means are different.

14. (Previously Presented) The method of claim 13, which includes mixing each of the fractions with a derivatizing agent prior to passing each fraction separately through the second separation means.

15. (Previously Presented) The method of claim 14, wherein detecting the components comprises detecting the components with laser induced fluorescent detector and wherein the derivatizing agent reacts with the fractions of the sample to make the components fluorescent.

16. (Original) The method of claim 15, wherein said first separation means is an isoelectric focusing electrophoresis system, and said second separation means is a sieving electrophoresis system.

17. (Currently Amended) A method comprising:

for each of a plurality of first separation means linked by a respective interface means to a respective one of a plurality of second separation means:

introducing a sample into the first separation means to achieve a separation into fractions;

separately passing each of the fractions out of the first separation means into the respective interface means; and

separately passing each fraction into the respective second separation means, different from the first separation means, to achieve a separation of the fraction into components, wherein all of the fractions are passed to the second separation means and at least some of the fractions include at least two components.

18. (Previously Presented) The method of claim 17, wherein all the interface means are provided in a common manifold, the method further comprising:

providing a plurality of buffer reservoirs connected to the inlet of a manifold and operating a valve means to connect a selected one of a plurality of buffer reservoirs to the inlet of the manifold, so that the same buffer reservoir is connected to all the interface means.

19. (Previously Presented) The method of claim 17 or 18, wherein the plurality of first separation means includes capillary tubes having inlet ends, and the method further comprises:

capturing at least one cell of the sample at a respective one of a plurality of immobilization agent sites on a planar surface;

aligning the inlet ends of the capillary tubes of the first separation means with the immobilization agent sites; and

drawing the cells into the capillary tubes.

20. (Previously Presented) The method of claim 19, wherein each immobilization site is sized to retain a single cell.

21. (Cancelled)

22. (Currently Amended) The apparatus of claim 7, wherein the plurality of first separation means and the plurality of second separation means are selected from the group consisting of: isoelectric focusing electrophoresis systems, a capillary sieving electrophoresis system, a free solution electrophoresis system, and a micellar electrokinetic chromatography system, ~~a reversed phase liquid chromatography system, a normal phase chromatography system, an ion exchange chromatography system, and a size exclusion chromatography system.~~

23. (New) The method of claim 19 or 20, wherein all the interface means are provided in a common manifold, the method further comprising:

providing a plurality of buffer reservoirs connected to the inlet of a manifold and operating a valve means to connect a selected one of a plurality of buffer reservoirs to the inlet of the manifold, so that the same buffer reservoir is connected to all the interface means.